

# Specifications — FOXBOX 4G DVI/VGA Series

- NOTE** The FOXBOX 4G DVI and FOXBOX 4G VGA consist of a transmitter (FOXBOX 4G DVI/VGA Tx) and a receiver (FOXBOX 4G DVI/VGA Rx) with one or two fiber optic cables linking the two units. They are available in singlemode or multimode versions.
- NOTE** For the VGA models, the analog RGB input signal is digitized pixel for pixel in the transmitter, sent digitally through the fiber cable, and converted back to analog RGB in the receiver.
- NOTE** The analog audio signal(s) is (are) digitized in the transmitter, sent through the fiber cable, and converted back to analog audio in the receiver.
- NOTE** These transceivers are class 1 laser products. They meet the safety regulations of IEC-60825, FDA 21, CFR 1040.10, and FDA 21 CFR 1040.11.

## Optical fiber interconnection between transmitter and receiver

Number/type ..... 1 or 2 fiber optic

- NOTE** Only one fiber is required to transmit video, audio, and unidirectional data. A second fiber is required to transmit return data for bidirectional control/communication.

Connectors ..... 2 LC connectors

Operating distance

Singlemode..... 30 km (18.75 miles) with singlemode (SM) cables with a FOXBOX 4G SM  
Multimode..... 300 m (985') with 62.5 µm multimode (MM) cables with a FOXBOX 4G MM  
1 km (3280') with 50 µm multimode (MM) cables with a FOXBOX 4G MM  
2 km (6561') with 50 µm 2000 MHz bandwidth laser optimized multimode cable with a FOXBOX 4G MM

- NOTE** Operating distance is approximate. These are typical maximum distances that may vary depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.

Nominal peak wavelength..... 850 nm for FOXBOX 4G MM, 1310 nm for FOXBOX 4G SM

Data rate ..... 4.25 Gbps

Transmission power

Singlemode..... -5 dBm, typical

Multimode..... -5 dBm, typical

Maximum receiver sensitivity

Singlemode..... -18 dBm, typical

Multimode..... -12 dBm, typical

Optical loss budget

Singlemode..... 13 dB, maximum

Multimode..... 7 dB, maximum

## Video — FOXBOX 4G VGA Tx/Rx

Signal type..... VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs

Gain ..... Unity

Pixel data bit depth..... 8 bits per channel, 3 channels (R, G, B)

Maximum resolution ..... 1600x1200 @ 60 Hz, digitized pixel for pixel; higher resolutions up to 2048x1120, undersampled

## Video input — FOXBOX 4G VGA Tx

Number/signal type..... 1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs

Connectors ..... 1 female 15-pin HD

Nominal level ..... 0.7 Vp-p for RGB

Minimum/maximum levels..... Analog: 0.3 V to 0.75 Vp-p with no offset, terminated

Impedance..... 75 ohms

Horizontal frequency..... 24 kHz to 100 kHz

Vertical frequency..... 40 Hz to 120 Hz

Return loss..... <-40 dB @ 5 MHz

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## Video output — FOXBOX 4G VGA Rx

Number/signal type.....	1 VGA-UXGA RGBHV, RGsB (follows input or can be set by user)
Connectors .....	1 female 15-pin HD
Nominal level .....	0.7 Vp-p for RGB
Minimum/maximum levels.....	0.3 V to 0.75 Vp-p, terminated
Impedance.....	75 ohms
Return loss.....	-30 dB @ 5 MHz
DC offset.....	±5 mV with input at 0 offset
Video delay .....	1-2 frames

## Sync — FOXBOX 4G VGA Tx/Rx

Input type.....	RGBHV, RGBS, RGsB, RsGsBs
Output type.....	RGBHV, RGsB (follows input or can be set by user)
Input level .....	2.5 V to 5.0 Vp-p
Output level .....	TTL: 5.0 Vp-p, unterminated, on HV; or 0.3 Vp-p on Gs, terminated
Input impedance .....	10k ohms
Output impedance .....	75 ohms
Polarity.....	Positive or negative (follows input or can be set by user)

## Video — FOXBOX 4G DVI Tx/Rx

**NOTE** \*Appropriate DVI-D to HDMI cables or adapters are required for HDMI signal input/output.

**NOTE** The FOXBOX 4G DVI Series can be used to distribute HDMI signals if you use a DVI-to-HDMI adapter. However, when using HDMI signals, these units do not transmit audio and CEC signals.

Resolution range .....	Up to 1600x1200 or 1080p @ 60 Hz, pixel for pixel; higher resolutions up to 1920x1200 @ 60 Hz, undersampled
Formats .....	RGB and YCbCr digital video
Standards.....	DVI 1.0, HDMI 1.2

## Video input — FOXBOX 4G DVI Tx

Number/signal type.....	1 single link DVI-D (or HDMI*)
Connectors .....	1 female DVI-I

## Video output — FOXBOX 4G DVI Rx

Number/signal type.....	1 single link DVI-D (or HDMI*)
Connectors .....	1 female DVI-I
Nominal level .....	0.8 Vp-p
Video delay .....	1-2 frames

## Audio

Gain	
Range .....	Adjustable, -18 dB to +10 dB
Default .....	Unbalanced output: 0 dB
Frequency response .....	20 Hz to 20 kHz, ±0.5 dB
THD + Noise.....	0.10% @ 1 kHz at nominal level
S/N.....	>80 dB at maximum output (unweighted)
CMRR.....	65 dB @ 20 Hz to 20 kHz
Audio bits per sample .....	18 bits per channel, 2 channels (L, R)
Sampling rate.....	48 kHz

## Audio input — transmitters (FOXBOX 4G DVI/VGA Tx)

Number/signal type.....	1 unbalanced stereo or 2 unbalanced mono
Connectors .....	(1) 3.5 mm mini stereo jack

Impedance.....	18k ohms unbalanced, DC coupled
Nominal level .....	-10 dBV (316 mVrms)
Maximum level.....	+8.9 dBV, (unbalanced) at 1% THD+N

**NOTE** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

**Audio output — receivers (FOXBOX 4G DVI/VGA Rx)**

Number/signal type.....	1 unbalanced stereo or 2 unbalanced mono
Connectors .....	(1) 3.5 mm mini stereo jack
Impedance.....	50 ohms unbalanced
Nominal level .....	-10 dBV (316 mVrms)
Maximum level (Hi-Z) .....	+7.6 dBu, unbalanced at 1% THD+N
Maximum level (600 ohm).....	+6.3 dBu, unbalanced at 1% THD+N
Audio delay .....	1.5 frames

**Control/remote**

Serial control ports on each unit (transmitter and receiver)	
Control.....	1 RS-232, 2.5 mm mini stereo jack (front panel)
Pass-through .....	1 RS-232, 3.5 mm captive screw connector, 5 pole (3 pins are used) (rear panel)
Baud rate and protocol	
Control.....	9600 baud, 8 data bits, 1 stop bit, no parity
Pass-through .....	9600 to 115200 baud
Serial control pin configuration ..	Mini stereo jack: tip = Tx, ring = Rx, sleeve = GND
Program control.....	Extron’s control/configuration program for Windows® Extron’s Simple Instruction Set (SIS™)

**General**

External power supply .....	100 VAC to 240 VAC, 50-60 Hz, external; to 12 VDC, 1 A, regulated
Power input requirements .....	12 VDC, 0.6 A
Temperature/humidity .....	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling .....	Convection, vents on top and side panels
Mounting	
Rack mount .....	Yes, with optional rack shelf kit
Furniture mount.....	Yes, with optional under-desk mounting kit
Enclosure type .....	Metal
Enclosure dimensions.....	1.0" H x 4.3" W x 6.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)
Product weight .....	0.7 lbs (0.3 kg) per unit, 1.4 lbs (0.6 kg) per pair
Shipping weight .....	3 lbs (2 kg) per unit, 6 lbs (3 kg) per pair
Vibration.....	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety.....	CE, CUL, FDA Class 1, UL
EMI/EMC .....	CE, C-tick, FCC Class A, ICES, VCCI
MTBF.....	30,000 hours
Warranty .....	3 years parts and labor

**NOTE** All nominal levels are at ±10%.

**NOTE** Specifications are subject to change without notice.

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